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December 18, 2009

BY ELECTRONIC FILING

Ms. Marlene Dortch
Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, DC 20554

Re: Notice of *Ex Parte* Meeting
GN Docket No. 09-51

Dear Ms. Dortch:

On December 17, 2009, C. Walter Ebell, Dr. William Barattino, Justin Stiefel, Stefan Lopatkiewicz, and the undersigned, representing Kodiak-Kenai Cable Company ("KKCC"), met with Carol Mattey, Thomas Koutsky, Rebekah Goodheart, Elvis Stumbergs, and Thor Kendall of the Omnibus Broadband Initiative ("OBI") to discuss KKCC's positions in the above-referenced proceeding. KKCC discussed the challenges and opportunities of middle-mile broadband infrastructure deployment by a carrier's carrier to remote areas of Alaska, and its views on universal service reform to foster such broadband deployment as part of the Commission's overall National Broadband Plan. KKCC discussed several of the points made in its comments in response to Public Notices #s 5 (Tribal Lands) and 11 (Middle Mile) in the above-referenced docket, and provided the attached documents during the meeting.

In addition, during the meeting a question was posed by the OBI team regarding the technical challenges of dealing with ice in the Arctic in terms of cable security and installation. On July 28, 2009, Tyco Telecommunications, KKCC's primary contractor, fiber manufacturer and cable installer for the proposed NFOL project, filed a letter with the NTIA responding to similar concerns raised in other venues. A copy of that publicly filed letter is also attached.

Please direct any correspondence concerning this matter to the undersigned counsel.

Sincerely,

DAVIS WRIGHT TREMAINE LLP

James M. Smith

Attachments

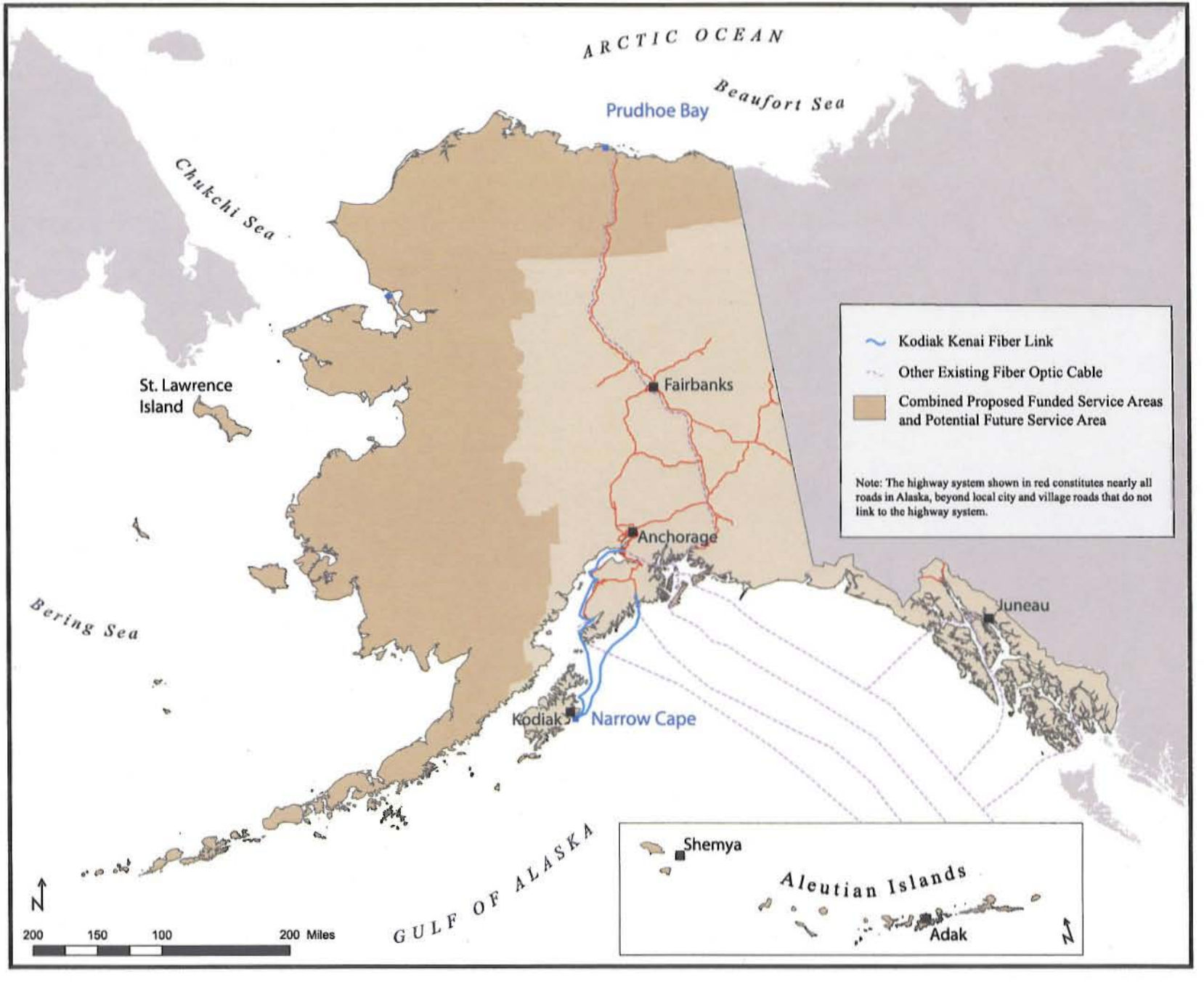
cc (w/atts., via e-mail):

Ms. Carol Mattey
Mr. Thomas Koutsky
Ms. Rebekah Goodheart
Mr. Elvis Stumbergs
Mr. Thor Kendall

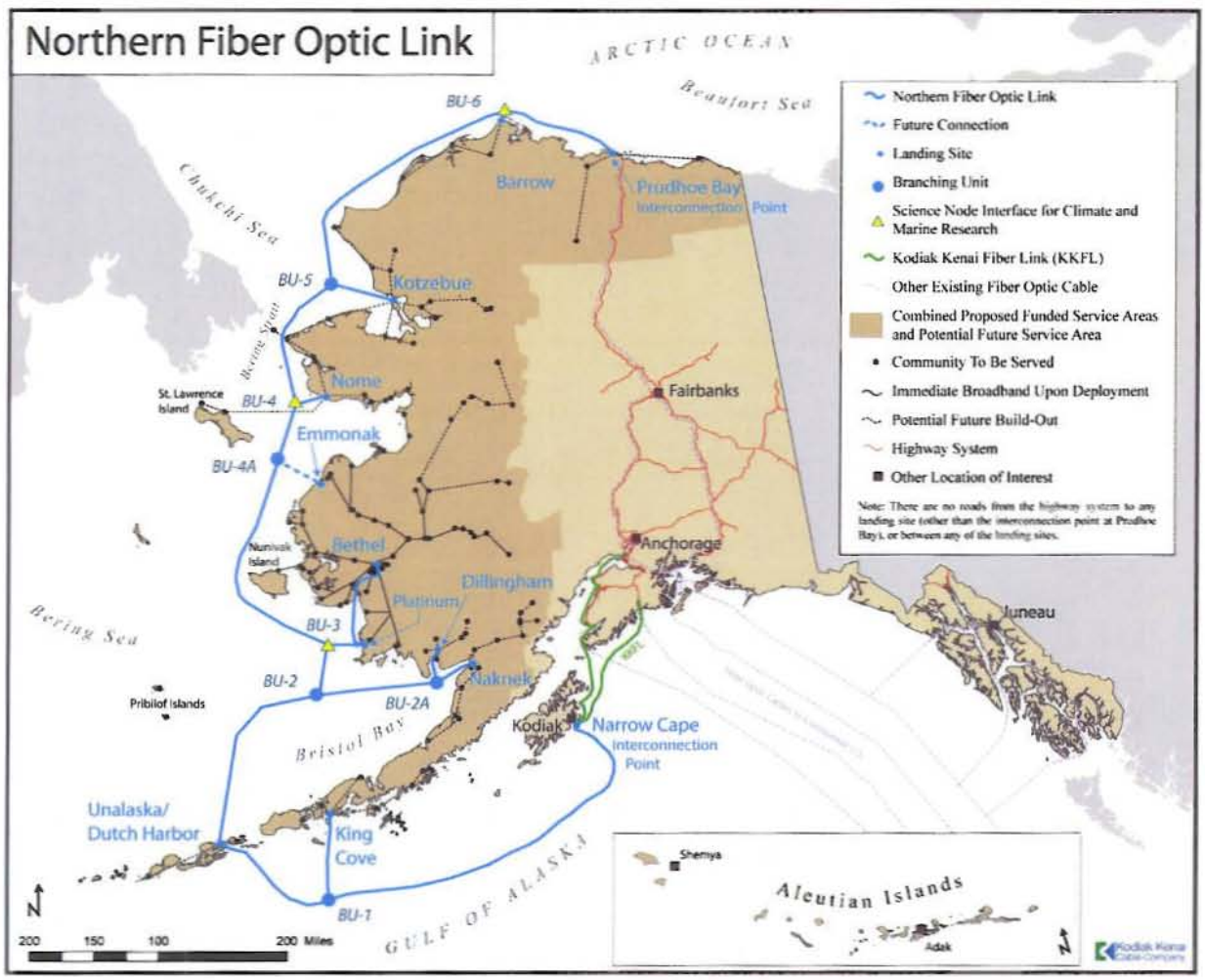
Outline for Meeting with FCC staff on the National Broadband Plan

Kodiak-Kenai Cable Company
December 17, 2009
11:30 AM

- Introduction to KKCC
- The Reality of Telecommunications Infrastructure in Alaska today
    - Current map of infrastructure
    - Current maps of federal and state withdrawn areas
    - Impact and reach of a subsea cable system
- The need for middle-mile support in virgin territory
- The neutral "carriers' carrier" model
- The need for investment in Indian Country


ARCTIC OCEAN
Beaufort Sea
Prudhoe Bay
Chukchi Sea
St. Lawrence Island
Fairbanks
Anchorage
Juneau
Bering Sea
Kodiak
Narrow Cape
GULF OF ALASKA
Shemya
Aleutian Islands
Adak
Kodiak Kenai Fiber Link
Other Existing Fiber Optic Cable
Combined Proposed Funded Service Areas and Potential Future Service Area
Note: The highway system shown in red constitutes nearly all roads in Alaska, beyond local city and village roads that do not link to the highway system.
N
200 150 100 200 Miles
N

SIZE AND DISTANCE COMPARISON


Northern Fiber Optic Link
ARCTIC OCEAN
Beaufort Sea
Chukchi Sea
Bering Sea
Bering Strait
Bristol Bay
GULF OF ALASKA
BU-6
BU-5
BU-4
BU-4A
BU-3
BU-2
BU-2A
BU-1
Barrow
Prudhoe Bay
Interconnection Point
Kotzebue
Nome
St. Lawrence Island
Emmonak
Nunivak Island
Bethel
Dillingham
Platinum
Pribilof Islands
Naknek
Kodiak
Narrow Cape
Interconnection Point
Unalaska/
Dutch Harbor
King Cove
Fairbanks
Anchorage
Juneau
Shemya
Aleutian Islands
Adak
N
200 150 100 200 Miles
Northern Fiber Optic Link
Future Connection
Landing Site
Branching Unit
Science Node Interface for Climate and Marine Research
Kodiak Kenai Fiber Link (KKFL)
Other Existing Fiber Optic Cable
Combined Proposed Funded Service Areas and Potential Future Service Area
Community To Be Served
Immediate Broadband Upon Deployment
Potential Future Build-Out
Highway System
Other Location of Interest
Note: There are no roads from the highway system to any landing site (other than the interconnection point at Prudhoe Bay), or between any of the landing sites.

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Where We Are

ALASKA

FEDERAL LANDS AND INDIAN RESERVATIONS

- Bureau of Indian Affairs
- Bureau of Land Management / Wilderness
- Department of Defense (includes Army Corps of Engineers lakes)
- Fish and Wildlife Service / Wilderness
- Forest Service / Wilderness
- National Park Service / Wilderness

Some small sites are not shown, especially in urban areas.

MILES
0 100 200 300 400 500

Albers equal area projection

Abbreviations

NCA	National Conservation Area
NF	National Forest
NHP	National Historic Park
NM	National Monument
NP	National Park
NPres	National Preserve
NRA	National Recreation Area
NWR	National Wildlife Refuge

U.S. Department of the Interior
U.S. Geological Survey

The **National Atlas** of the United States of America®

pagefed_ak10.pdf INTERIOR-GEOLOGICAL SURVEY, RESTON, VIRGINIA-2003


Beaufort Sea
Colville River
Yukon River
Canada
Bering Sea
Fairbanks
Tanana River
Anchorage
Gulf of Alaska
Pacific Ocean
Miles 200 0 200 400
Kilometers 200 0 200 400

The National Broadband Plan as it Relates to New Middle-Mile Infrastructure

- A White Paper -

Prepared by the Kodiak-Kenai Cable Company
December 17, 2009

FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

Introduction to KKCC

Old Harbor Native Corporation and Ouzinkie Native Corporation formed the Kodiak-Kenai Cable Company, LLC ("KKCC") in 2001 to construct and operate the Kodiak Kenai Fiber Link System, a 600 mile submarine fiber optic cable network. The system was placed in service January 2007 and currently connects the 60,000 people of the Kenai Peninsula and Kodiak Island with Anchorage. The project was completed on time, within budget, and has operated without interruption in service since it was connected. KKCC operates its network as a neutral "carriers' carrier", meaning it provides only wholesale capacity to all last-mile carriers using non-discriminatory pricing and it does not provide retail last mile services, so it is never in competition with the last-mile carriers to which it provides middle-mile capacity.

Early this year, KKCC announced its intention to provide further middle-mile opportunities for all of unserved western and northern Alaska through its proposed Northern Fiber Optic Link ("NFOL") project. KKCC has teamed with one of the largest manufacturers of subsea fiber optic cable in the world, and the only "Buy American" compliant subsea cable manufacturer in the US for the manufacture and installation of the system if the proposal gets funded. KKCC has submitted an application to the Rural Utilities Service's ("RUS") BIP program and the National Telecommunications and Information Administration's ("NTIA") BTOP program for partial funding for the system to match the considerable outside resources KKCC will be providing.

KKCC is a socially and economically disadvantaged small business concern, as defined under Section 8(a) of the Small Business Act (15 USC 637), and is keenly focused on issues related to Tribes and Tribal lands given its status as an Alaska Native Corporation authorized under the federal Alaska Native Claims Settlement Act.

The Need to Support More Middle-Mile Infrastructure

Western and northern Alaska is the most unserved and isolated area of the United States. The total unserved land mass in this region is the equivalent of most of the Eastern seaboard of the country. It is home to 142 communities and 143 federally recognized Indian Tribes and Tribal Organizations, representing 25 percent of all Tribes in the U.S. It is hard to imagine any other area of the country in which a single investment in new middle-mile infrastructure could have a positive impact on such a large part of Indian Country.

To address this basic need in rural Alaska, KKCC undertook significant investment of time, money and resources to design and prepare for the construction of NFOL. The NFOL system is the most comprehensive proposal to serve "unserved" Alaska pending before the RUS and NTIA for BIP and BTOP funding. Specifically, it serves a larger geographic area, more people, and supports more local, state and federal missions than any other proposed terrestrial middle-mile system, all on a carrier-neutral basis with the fastest possible technical solution. It will serve Alaska's unique needs for

decades to come, creating a lasting legacy and a truly fair and open playing field for last-mile broadband competition.

The NFOL is a 5,713 kilometer/3,300 mile high-speed, subsea fiber optic cable that, for the first time, will allow rural residents and businesses in western and northern Alaska to gain access to the bandwidth they need for a variety of uses and users. In addition, the system will support all the telecommunications needs of the region and its end users, including schools, hospitals, regional and local clinics, the University of Alaska's rural campuses, the commercial fish processors who employ tens of thousands of Americans, the Community Development Quota groups, all state and federal agencies, regional and village Native corporations, non-profit groups, businesses and consumers, both at home and through mobile technology. NFOL will act as the backbone for the carriage of all data and services for approximately half the state's land mass, and will allow current and prospective telecommunications entrants to deploy a host of new wired and wireless services throughout the region. Absent a true high capacity backbone that only fiber optic cable can produce, the potential for future innovation and deployment in the region will be severely limited.

Neutral Carriers' Carrier vs. Retail Common Carrier: All Operational Models Are Not Alike

A key feature of the system is the fact that KKCC operates as a neutral "carriers' carrier", meaning KKCC provides open, transparent and equally-priced wholesale capacity for use by competitive and incumbent local exchange carriers. All carriers have access to the bandwidth at the same pricing levels. This insures no one last-mile service entity or carrier has monopoly pricing control in any market. This is how KKCC operates its current KKFL system connecting Kodiak Island and the Kenai Peninsula with Anchorage. Since lighting the KKFL system, the investment and innovation made by last-mile carriers along the Kenai Peninsula and on Kodiak Island have flourished, all to the benefit of consumers and end users.

It is important to distinguish between a retail or integrated common carrier and a neutral "carriers' carrier". A retail common carrier may own centrally needed network infrastructure and resell capacity to other carriers, but it may also use the same system infrastructure for its own last-mile offerings in direct competition with the same carriers to which it is providing wholesale capacity. Claims by integrated common carriers of protecting competition by relying on public tariffs, promises of fair pricing and other public commitments still cannot guarantee the same level of last-mile broadband competition that is provided for by the neutral carriers' carrier model. While the integrated carrier model gives the infrastructure owner tremendous pricing control, thereby allowing for the ability to end up with substantially dampened competition in the long run, the neutral carriers' carrier model provides an extra layer of insulation to policy makers, last-mile carriers and end-users. As a neutral carrier's carrier KKCC does not and will not enter the last-mile market, and therefore does not compete against the various last-mile carriers to whom it sells capacity. This results in all last-mile carriers being able to fairly and openly compete with one another without worrying about KKCC being in retail competition with them.

Consequently, KKCC has received the strong support of almost all Local Exchange Carriers (LECs) in western and northern Alaska, including TelAlaska, Inc. (including Mukluk Telephone and Interior Telephone), OTZ Telephone Cooperative, Inc., Arctic Slope Telephone Association Cooperative, and Bristol Bay Telephone Cooperative, all of whom want access to a fiber optic backbone on a non-discriminatory basis so that they can focus on bringing last-mile services to the public without worrying about competing against their own main service provider at the retail level.

KKCC agrees with other Alaska carriers who have indicated to the Commission on the record the need to have all anchor institutions as customers in order to make the best possible business case for new middle-mile infrastructure. The economics of any backbone will require all anchor institutions to be users. The key distinction, though, is whether one retail common carrier will own the middle-mile infrastructure and end up with all anchor institutions as their own last-mile end user customers. If this is allowed to happen few, if any, anchor institution customers of substance in those last-mile markets will remain available to sustain competitive operations.

Alternatively, if an independent carriers' carrier owns the backbone middle-mile infrastructure, all anchor institutions will still have their traffic carried on the system, but all last-mile carriers will have an equal opportunity to secure space on the system and contract for the provision of service to those anchor tenants.

But even that may not be enough in an area as large as western and northern Alaska, which has never enjoyed anything resembling adequate middle-mile infrastructure. This is where more direct USF support for new middle-mile infrastructure in virgin territories is essential. Currently, the 142 communities and 143 federally recognized Tribes in western Alaska are served only by satellite, with high latency, low throughput and costly service. Virtually all interested parties in the region – last-mile carriers, the State of Alaska, the Governor of Alaska, satellite operators, the University of Alaska, a host of anchor institutions and last mile users, and others – are on record lamenting the deplorable service that satellite offers to the region.

Under these circumstances, it is an unavoidable economic fact that the cost of deployment will be high in relation to the number of end users on the system. This, in turn, raises important public policy issues that must be addressed in the National Broadband Plan:

> -In areas where new middle-mile infrastructure is badly needed, but the costs of deployment are high in relation to the number of households or people served, should USF funding be used to directly reduce those costs?
>
> - Should the Commission adopt a policy whereby when the USF supports new infrastructure in previously unserved areas, it favors the ownership of that new infrastructure by independent neutral carriers' carriers who will not compete in the last-mile markets?

- Should the Commission adopt policies that encourage the deployment of technology capable of accommodating future growth in demand?

- Should the Commission adopt policies whereby funding and support for new middle-mile infrastructure is done with the least environmental impact possible, based on land use conditions, federal and state withdrawn areas and other sensitive land issues?

- Should USF funding be used to support new infrastructure for the large swaths of Indian Country and Tribes that today are isolated from service?

By answering these questions in the affirmative, the National Broadband Plan can ensure that the USF enables true universal broadband service.

The Acknowledged Need Fiber Optic Cable

The uses of telecommunications for all aspects of life are increasing dramatically. More services and applications are moving towards IP based connectivity. The trend toward cloud computing and centralized data storage, and social networking is booming. In addition, it is projected that digital medical records will account for 30% of all data stored on the world's computers by 2010[1], not to mention the growth of video on the Internet, which according to Cisco will account for 90% of all consumer IP traffic and all mobile traffic by 2013[2]. All of this data, and what users are experiencing at home, work and school, point to the fact that Americans will require access to huge data backbone networks to keep up with the oncoming wave of information. While most of the Lower 48 is covered with active and dark fiber backbones, western and northern Alaska lacks such basic infrastructure. This gap must be closed for this region to catch up with the rest of the country.

This was recently verified by several officials and experts in Alaska. Steve Smith, University of Alaska Chief Technology Information Officer, stated during a public presentation about infrastructure in the Arctic:

> *"Educause", the national higher education IT organization, estimates that in the not too distant future the average American household will need upwards of 100 megabits of bandwidth. That is a factor of nearly 100 times what many Americans have today. There remain sections of the country including large areas of Alaska, where even one megabit is not possible. Where high speeds are available, the price can be prohibitive."* [3]
> (Emphasis added)

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[1] *There Can Be No Health Care Reform Without An Information Revolution*, Forbes.com, Janet Marchibroda, June 17, 2009 (http://www.forbes.com/2009/06/17/health-care-reform-leadership-governance-information.html)

[2] *Cisco: By 2013 Video Will Be 90 Percent Of All Consumer IP Traffic And 64 Percent of Mobile*; TechCrunch.com, June 9, 2009 (http://www.techcrunch.com/2009/06/09/cisco-by-2013-video-will-be-90-percent-of-all-consumer-ip-traffic-and-64-percent-of-mobile/)

[3] *ARRA and Broadband in Alaska*, Steve Smith/UAA, September 2009 (http://www.alaska.edu/bor/agendas/2009/sep-24-25/090924ref21.pdf)

With a typical satellite-based T1 line (approximately 1.5 MB/s) costing anywhere from $8,000 to $15,000 *per month* in rural Alaska – and in some cases much, much more - it is no wonder there is limited-to-no-true broadband connectivity for most residents there, at least by any definition considered reasonable in the Lower 48. Yet these same Alaskans, a large percentage of whom are Alaska Natives, need the same level of reliable, high speed service that their fellow Americans enjoy in Juneau, Anchorage, Seattle, Washington, DC and every other urban center. If we are to move forward as a nation, no American should be denied access to an education, adequate healthcare or business opportunities simply because they live in an area with high infrastructure costs.

The fast transition to mobile-based Internet access is accelerating across the country and the world. Because western and northern Alaska share economic traits of much of the developing Third-World, it is fair to compare the limitations and opportunities between Alaska and other parts of the developing world. According to a recent special report in *The Economist*, "Mobile broadband will become a global phenomenon – it will be the dominant form of broadband."[4] As evidenced by accompanying data in the report by 2013 mobile-broadband subscribers will account for approximately 68% of total broadband users.[5]

In an accompanying report *The Economist* staff noted, "A study by the World Resource Institute found that as developing-world incomes rise, household spending on mobile phones grows faster than spending on energy, water or indeed anything else."[6] The authors also noted, "All this is transforming the telecoms (sic) industry. Within a few years its centre of gravity has shifted from the developed to the developing countries. The biggest changes are taking place in the poorest parts of the world".[7]

This broadband growth phenomenon is why a new state-of-the-art high-speed fiber optic cable called SEACOM – designed similarly to the KKCC proposal – was just completed along the Southeast coast of Africa connecting it to Mumbai, India at an estimated total project cost of approximately $700 million[8]. Similar high-cost cable systems have been constructed within the last several years to close the gap of connectivity. The construction of the SEACOM system now closes the loop around Africa, just as a western and northern Alaska fiber ring will finally provide service to one

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[4] *Finishing the Job: Mobil-phone access will soon be universal. The next task is to do the same for the Internet*, The Economist at 18 of the special report section, (published September 26, 2009)

[5] Id. – see inset chart #7 which shows approximately 1.5 billion broadband users will be mobile out of an estimated 2.2 billion users.

[6] *Mobile Marvels,* The Economist at 3 of the special report section, (published September 26, 2009). The authors specifically discuss the story of Ms. Wokhwale of Bukaweka, Uganda. After new services were brought to her village she "prospered because being able to make and receive phone calls is so important to people that even the very poor are prepared to pay for it. In places with bad roads, unreliable postal services, few trains and parlous landlines, mobile phones can substitute for travel, allow quicker and easier access to information on prices, enable traders to reach wider markets, boost entrepreneurship and generally make it easier to do business." The same needs and opportunities exist in western and northern Alaska which is why a true fiber based broadband solution must be brought to the region.

[7] Id. at 4.

[8] *Undersea fibre-optic cable touches Mombasa*, East African Business Week, Feb. 28, 2009 (http://www.busiweek.com/index.php?option=com_content&task=view&id=1125&Itemid=1)

of the last remaining large regions with an active population to lack a basic fiber backbone network.

In Africa, micro-entrepreneurs account for 90% of all businesses while globally they account for 50-60%.[9] A recent World Bank report studied the relationship between telecommunications services and GDP growth in 120 developed and developing countries. According to the report, "an increase in ten percentage points in mobile-phone adoption in a developing country increased growth in GDP *per person* by .08 percentage points."[10] (Emphasis added) The World Bank also noted that while mobile-phones were more effective than fixed-line phones in promoting this growth, the most effective means of GDP growth came from access via true broadband which accounted for a *per person* increase in GDP of 1.4 percentage points for every 10 percent increase in broadband penetration.[11] This underscores the need for a network backbone based on fiber optic connectivity to support all surrounding telecommunications needs and deployment.

So what does this say about the economic prospects in western and northern Alaska if policy makers plan wisely? First we must analyze the current state of available infrastructure. This region of Alaska is the most remote, rural and unserved region of the entire United States. If any area meets all the requirements, goals and policy aims of the RUS and NTIA broadband funds in the Recovery Act it is this vast area of Alaska and the Americans who call it home. If any area of the U.S. is in need of a significant push in both investment and rational policy guidance under the National Broadband Plan, it is this part of Alaska. ***Absent a significant federal investment, it is unlikely true broadband would ever be deployed in the area in a timely manner***. This lack of access to private traditional funding is actually a requirement of current Recovery Act funds. Here again, Steve Smith's presentation is informative: "The biggest challenge in Alaska is that western and northern regions are principally served by satellite, ***a choke point for true broadband services***." (Emphasis added).[12] KKCC wholeheartedly agrees, and based on the feedback received from Alaskans to date, they agree as well.

That conclusion was the basis for KKCC's decision to construct the KKFL three years ago, and is now the basis of our effort to construct the NFOL. Further, in comments filed by the Regulatory Commission of Alaska ("RCA"), that body noted that reliance on satellite for middle-mile transport "***is the major impediment*** in providing next generation broadband speeds throughout the state, and particularly in sparsely populated areas," and additionally that, "**significant federal funding** may enable the development of further middle mile infrastructure (fiber, microwave) that will allow Alaska to reduce its reliance on satellite transport throughout its rural areas." (Emphasis added).[13]

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[9] *Eureka Moments: How a luxury item became a tool of global development,* The Economist at 4 of the special report section, (published September 26, 2009).
[10] Id. at 7.
[11] Id. at 8 – see inset chart #4
[12] See footnote 3.
[13] Comments of the Regulatory Commission of Alaska at 5-6, GN Docket No. 09-29 (filed Mar. 25, 2009) (emphasis added)

In comments filed with NTIA and RUS on the broadband infrastructure program, the State of Alaska noted that, "Much of Alaska's rural communities have no access to broadband service at all. Where satellite broadband connectivity does exist, downstream and upstream speeds are only a fraction of 1 mbps."[14]

The State went on to say that,

> ***"Life, health and safety demands in rural Alaska are at high risk due to this limited and satellite-dependent broadband infrastructure****. Currently there are no communities with interoperable public safety communication capabilities in Alaska's rural regions. Few, if any, local communities have the ability to communicate with public safety resources in their neighboring communities let alone with state or federal public safety resources." (Emphasis added.)*[15]

The situation for day-to-day operations of state agencies in rural Alaska is just as limited, as cited for NTIA and RUS in the same comments: "Even 1 megabits-per-second downstream and 250 kilobits-per-second upstream speeds, which are below minimal staple speeds as defined by broadband carriers across the contiguous states by as much as 50 percent, ***are currently unachievable by state agencies in rural Alaska."*** (Emphasis added)[16]

The Personal Broadband Industry Association (PBIA), a national trade association based in Silicon Valley, CA and comprised of leading telecommunications companies, suppliers, service providers and related entities who are seeking a more unified national broadband policy, filed comments with the FCC discussing the opportunities and challenges of providing service in rural America. PBIA singled out KKCC's proposed NFOL as a prime example of how policy makers can help close the "rural/urban" digital divide and support the coming transition for mobile-broadband needs as follows:

> *"Thousands of miles of dark and unused fiber transit the Lower 48 and are accessible to regional and local service providers to bring the promise of the speed and throughput of such fiber to rural communities using newly emerging fixed and wireless technologies and strategies.* ***The case to be made for the rural NFOL Alaska project stands apart on its own because of the unique challenges facing the region, its remoteness, and its needs for assistance. If federal policy makers can help insure the successful roll-out of a project such as the one proposed in Alaska under these challenging conditions – which we believe can be done - then achieving true ubiquitous personal broadband anywhere in the Lower 48 is achievable."***[17] (Emphasis added)

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[14] Comments of the State of Alaska at 12, Docket No. 090309298–9299–01, (filed April 13, 2009) (http://www.ntia.doc.gov/broadbandgrants/comment.cfm?e=BD712663-F93B-4ED5-9817-EB6E29A6C2DA)

[15] Id. at 5

[16] Id. at 11-12

[17] Comments of the Personal Broadband Industry Association at 4, at 5-6, GN Docket No. 09-29 (filed Mar. 25, 2009) (emphasis added)

PBIA went on to offer the following:

> ***"Wiring the rest of the country while leaving this part of Alaska unserved by true fiber-based broadband will still leave a gaping hole in the nation's coverage area and will leave requirements of the 1996 Telecommunications Act unmet.*** *Further, PBIA argues as long as a willing neutral carrier's carrier attempts to avail itself of the funds provided in the Recovery Act to deploy a technologically neutral fiber based solution for western Alaska, then the Commission should not consider two-way satellite broadband as meeting the definitions of "reasonably comparable" to broadband services available in urban areas. Rather, the FCC's rural program should support and encourage projects and technologies that can deliver to rural areas all the advanced economic and safety benefits enjoyed in urban America but that would not be possible to build but for the funding made available in the Recovery Act.* ***No proposed project in America would meet such a definition ahead of the proposed Alaska NFOL project. We do not envision a true, ubiquitous personal broadband network in the United States if the residents of western Alaska cannot fully participate as well." (Emphasis added)***[18]

As for end users in Alaska, who for years have had only limited, costly and unreliable access to critical communications options, their thoughts and comments on satellite services are even more pointed and focused. KKCC has received numerous resolutions and letters of support from around Alaska for the NFOL system because they experience every day the problems, costs and challenges identified above by the State, GCI, the RCA and the University of Alaska vis-a-vis the inadequacies of satellite connectivity. We have posted on our web site a comprehensive list of the groups who are supporting the NFOL as a neutral, carriers' carrier fiber optic cable system (http://www.northernfiberlink.info/support_letters.html).

The Challenge of Timing and the Needs of Indian Country

Any policy adopted by the Commission must take into account the acute needs of Indian Country as a whole, the lack of telecommunications investment and the lack of services available to Tribal members and residents for work, schooling and at home. The western and northern portion of Alaska is home to 143 federally recognized Indian Tribes and Tribal organizations. They account for 25% of all Tribes and Tribal Organizations in the U.S. The final National Broadband Plan must take into account the needs of Tribes and Tribal lands, and the unique approach that may be required to secure the proper investment and long-term assurance of having fair competition in Alaska. And, most importantly, the push for new investment in rural Alaska must not take five to 15 years. It can and should be completed much sooner, as those longer time frames represent generations in the world of technology and communications. This can reasonably be accomplished in Alaska via a neutrally owned system operated on a carrier's carrier basis that can be deployed in just two years, as KKCC has proposed.

[18] Id. at 6

Lastly, in terms of timing, it is important to remember that any attempts to cross mountain ranges, fishing areas, federal or state withdrawn lands (i.e. federal and state parks, refuges, wilderness areas, monuments, etc) or Native Allotments with terrestrial fiber optic cable or successive microwave repeaters, as proposed by some carriers, could be subject to intense, costly and lengthy scrutiny by land owners, federal and state agencies and environmental groups. Success in securing permits to cross such lands is not assured and could be extended through a long and protracted public comment period, costly NEPA review processes and ultimately, extended litigation. These obstacles put any discussions of overland terrestrial fiber optic cables or microwave backbone routing in Alaska in doubt, and seriously brings to question even a five to 10 year build time. This is yet another reason why KKCC chose the less controversial and more expeditious installation option of using a subsea cable to ring the western and northern coast of the state as the main backbone for penetration to all 142 communities and 143 Tribes in the region. The risks associated with any other proposal or terrestrial approach seem too great for any company to realistically assume and puts near term opportunities for better service to end users in jeopardy.

tyco
Telecommunications

MaryAnn Brereton
Assistant General Counsel

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Fax: 973 656 8805
mbrereton@tycotelecom.com

July 28, 2009

Via E-Mail

Mr. Mark G. Seifert
Senior Advisor to the Assistant Secretary
National Telecommunications and Information
Administration
U.S. Department of Commerce
1401 Constitution Avenue, N.W.
Washington, D.C. 20230
mseifert@ntia.doc.gov

Re: *Docket 090309298-9299-01*

Dear Mr. Seifert:

Tyco Telecommunications (US) Inc. ("Tyco Telecom") has filed comments in response to the Request for Information in this docket on April 13, 2009. In those initial comments, Tyco Telecom advocated for NTIA and RUS to make funding available under American Recovery and Reinvestment Act (the "Act") authority for middle-mile, long-haul and trunking infrastructure, including undersea cables, as a means of providing backbone support for the deployment of advanced broadband capabilities, particularly in areas such as Alaska, Hawaii and the U.S. territories and possessions.

In this supplemental filing, Tyco Telecom seeks to clarify for the record what it perceives as several technical errors filed by General Communication, Inc. ("GCI") in its comments in this docket, also filed on April 13, 2009. In its comments, GCI concurs with Tyco Telecom's view, that cost-effective middle-mile transport for broadband services in the vast, unserved expanses of Alaska, require a fiber-optic solution, as satellite technology may be unable to effectively support next-generation broadband applications.[1] However, GCI incorrectly commented that the requisite technology does not exist to deploy a reliable fiber cable north of the Bering Strait. As an industry leader in the design, development and installation of undersea fiber cables, Tyco Telecom disagrees with this assertion based upon several factors, including the experience of having deployed such a system in 2003 at higher latitudes than any fiber cable proposed for deployment for the Northern Fiber Optic Link (NFOL) project. Tyco Telecom has deployed more than 420,000km of undersea cable throughout the world's oceans and seas during its history and is confident that the requisite technology exists and has been proven in multiple projects.

In particular, GCI introduced comments relating to risk for undersea fiber cables from Ice Scouring. Ice Scouring is a known risk to undersea cables as are other forms of external

[1] Comments of General Communication, Inc., at 3-5.

aggression such as anchoring and fishing operations. However, as with all undersea cables, extensive engineering efforts are performed to evaluate all forms of risk prior to system manufacture and deployment. A comprehensive route and cable design plan is developed to mitigate those risks by several means. In the case of NFOL, in which an application for partial funding under the RUS and NTIA broadband programs is being completed, Tyco Telecom and Kodiak Kenai Cable Company (KKCC) have already completed an exhaustive engineering Desk Top Study (DTS) of the proposed route. In addition to the DTS, we will conduct a complete marine survey of the route to ensure the cable design meets risks posed by the seafloor and any external aggression sources not accounted for in the DTS, as is the industry standard for any such project. Any risk identified within the DTS and subsequent survey receives an appropriate mitigation treatment. These treatments include route modifications to avoid the risk area, cable armoring with protective steel strands and burying the cable up to 2 meters (6.56ft) beneath the seafloor surface. Even deeper burial can be achieved if warranted. The DTS extensively studied the region from Nome to Prudhoe Bay, including areas around Kotzebue and other sensitive areas, for Ice Scouring risk, referencing known and published studies of the issue. The DTS considered multiple Ice Scouring factors including depth into the seafloor, water depth in which events occurred, frequency, potential age of event, as well as recent changes in ice conditions. We also held follow up discussions with Ice Scouring and Arctic experts at the University of Alaska Fairbanks, a known research institution focused on this issue, to review our results. Based on the volume of available scientific material and academic feedback, Tyco Telecom was able to evaluate the risk of future Ice Scouring events at various water depths within the Beaufort Sea and Chukchi Sea region. The resulting design specifies a mitigation plan consisting of cable routing beyond the risk, cable armoring and extensive 2 meter burial within the risk area which we feel provides appropriate protection.

It is worth noting that while GCI's comments focused on the risk to fiber cables in the Beaufort Sea, they omitted comments on similar risks to the existing BPTA Northstar Pipeline located offshore from Prudhoe Bay and within close proximity to the proposed NFOL cable route. This pipeline space, installed in 2000, consists of two 10" pipes approximately 6 miles long that terminate in a water depth of 12m and is within the range of Ice Scour. It is buried to a minimum depth of 1.83 (6 ft) meters; a depth that was established to mitigate risk of Ice Scour to comply with the State of Alaska permit conditions (refer to the State Pipeline Coordinator's Office Lease Compliance Monitoring). NFOL extends further offshore and will be buried out to a water depth of 30 meters to the end of the primary risk area, and to a burial depth of 2 meters (deeper than required for Northstar). This burial depth will provide NFOL with an equivalent level of protection from all forms of external aggression as that required for permit compliance for the BPTA pipeline. Considering the disparate consequences of damage to an oil/gas pipeline compared to that of a fiber cable (no material would be released), Tyco Telecom and KKCC feel our conservative approach will ensure the integrity of communication services to the people of Alaska.

As a specific basis for our comments on this matter, we cite Tyco Telecom's prior experience in successfully deploying the Norwegian Svalbard Cable System ("Svalbard") for the Norwegian Space Center. The Svalbard system consists of two 1,400km (870miles) segments installed between Harstad, Norway and Svalbard. Nearly the entire length of the Svalbard system is located north of the northern most proposed NFOL Beaufort Sea segment. The Svalbard

system faced Ice Souring challenges at the landings that were mitigated through similar means to be employed for NFOL. Tyco Telecom designed, manufactured and deployed Svalbard using similar engineering, technology and tools as will be used with NFOL. Svalbard has not suffered an Ice Scouring event since installation in 2003.

Tyco Telecom and KKCC have performed appropriate engineering of the NFOL route and system design to ensure it is a state-of-the-art, highly reliable fiber optic backbone serving the 150 connected communities of western Alaska. We are comfortable that our experience building 420,000km of undersea cable, including a very similar system for the Norway Space Center, has taught us the appropriate installation techniques required to mitigate the Ice Scouring issue. We are comfortable that our marine group possesses industry leading installation tools (e.g. plows, burial devices, ROVs) and that our cable designs ensure the highest quality undersea systems available. We respectfully look forward to completing this important NFOL system and to working with RUS and NTIA on this and other projects in the future.

Sincerely yours,

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